

Remarks

The Applicants would like to thank the Examiner for the careful consideration given the present application. The application has been carefully reviewed in light of the Office action, and amended as necessary to more clearly and particularly describe the subject matter in this application.

Claims 10 and 11 are currently amended. No new matter is added.

Claims 10 and 11 stand rejected as obvious in view of Spencer et al. (US Patent 4,609,801, hereinafter "Spencer"). With regards to amended claims 10-11, for at least the following reasons, the Examiner's rejection is respectfully traversed.

Each of amended claims 10 and 11 now state, in pertinent part, "wherein the locking projection is formed on the surface on which the insulating films are not formed."

Spencer does not disclose or suggest such structure.

Specifically, in the instant invention as shown in Figure 4, projection 35 includes a face surface having a conductive, metal face because no insulating film is formed on the surface of the front plate that is connected with the inner main body (i.e., the surface on the side of the projection 35). That is, as claimed, the locking projection is formed on the surface on which the insulating films are not formed.

Similarly, no insulating film is formed on the interior surface of the locking hole. When assembled, the surface of the projection 35 is in direct, electrical contact with an inner peripheral portion of the locking hole 31, so as to provide electrical conductivity therebetween. Electrical conduction between the front plate and the inner main body is very important to inhibit or prevent microwave leakage.

Therefore, the front plate and the inner box main body are electrically connected, and an excellent radio wave shielding effect is achieved. Thus, despite either or both of

the front plate and the inner main body having insulating films thereon, which may occur before assembly of the projection with the locking hole, the mechanical connection between the projection and the locking hole also forms an electrical connection therebetween to provide a radio wave shielding effect.

Neither Spencer nor the other cited prior art reference Enami (U.S. 4,563,559) teaches or suggests that a projection includes a face surface having a conductive, metal face that is formed on the surface on which the insulating films are not formed. While Enami does discuss a paint layer as shown in Fig. 45, the paint layer 1605 is positioned on all of the front surface of a front panel 605, and a paint layer 1609 is positioned on an inner surface of the top panel 609. Enami's painted layer 1605 on the front surface continues all the way to the connected side with the top panel 609. Therefore, the construction of Enami is for use with two fold-to-bend portions, and not with a projection being received in a corresponding hole.

Indeed, it is respectfully submitted that Enami provides a clear *teaching away* that would *render the prior art reference being modified unsatisfactory for its intended purpose and change the principle of operation of the prior art reference.* See MPEP 2141.02, 2143.01, and 2145. Indeed, a prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984).

Specifically, as detailed above, Enami teaches away from the combination of paint layers and a locking projection / hole system because Enami states that such a combined system can produce microwave leakage. In short, a person of ordinary skill in the art would not look to Enami for any deficiencies of Spencer, and the Examiner

has provided no reasoning as to why a person of ordinary skill in the art would ignore Enami's clear teaching away.

Specifically, Enami states that "in the case where the area of electrically conductive portions is less than 1/3 of the total area of contact between the front and top panels 605 and 609, there is a problem that the paint layers 1605 and 1609 becomes heated whereby the paint is burned, causing leakage of electric waves." Enami further states, "Thus, it has been found that leakage of electric waves due to the burning of paint layers when painted steel sheets are used can be prevented by making the area of contact of electrically conductive portions in the joint greater than 1/2 of the total area of contact." See Col. 14, lines 15-30 of Enami.

As a result, Enami only teaches that where painted surfaces are used, a large electrical conduction area must be used to prevent paint burning. Consequently, Enami teaches a person of ordinary skill that a locking projection and hole cannot provide a sufficient electrical conduction area. Instead, two fold-to-bend portions must be used to provide the sufficient conduction area. Therefore, Enami provides a clear *teaching away* from using a locking projection and hole system where two fold-to-bend portions are utilized.

Thus, no modification of Spencer and Enami with painted surfaces, projections, and holes can provide the requirements of claim 10 without *rendering Spencer and Enami unsatisfactory for their intended purposes and changing their principles of operation*. Accordingly, the subject application is not rendered obvious in view of Spencer or Enami by way of any proposed modifications thereof.

Further, as admitted by the Examiner, Spencer does not disclose, teach or suggest that a second fold-to-bend portion has a locking hole and a flange portion has a

locking projection penetrate through the locking hole, as recited in amended claim 10.

Instead, Spencer merely discloses that a flange portion 96c of an inner member 88 has a plurality of equally spaced holes 104c, and a plurality of dimples 106c are pressed into the portion 102 of a front panel flange 96 which overlaps and captures the top panel flange 96c, directly over the spaced holes 104c (column 6, lines 3-8 and Fig. 11 of Spencer). Moreover, according to the structure shown in Figure 9 of Spencer, a though-hole is formed in the end of the member 54 (corresponding to the flange) and the projection is formed on the member 98b (corresponding to the second-fold-to-bend portion). Thus, during assembly, the relative position between the projection and the hole cannot be confirmed from the outside by a user. Indeed, the hole is completely hidden from view, and the projection must be blindly assembled within the hole. Therefore, accurate positioning cannot be maintained, so that coupling failure may occur.

The inner box used in a microwave oven is subjected to cyclic heating and cooling stresses over a long period of time. Thus, reliable coupling is required. For example, if one coupling failure occurs at a position in the inner box, such uncoupling may increase into multiple coupling failures over time. As a result, undesirable microwave leakage can be caused, leading to a device that is unfit for its intended purpose.

Accordingly, by the instant application, the structure of amended claims 10 and 11 provide a clear advantage over that of Spencer. More specifically, in the instant case, the second fold-to-bend portion 27 has a hole 31, and the flange portion 33 with the projection 35 is inserted into the clearance between the first fold-to-bend portion 25 and the second fold-to-bend portion 27. Thus, because the locking projection 35 is

visible to a user through the locking hole 31 during manufacturing and assembly, it is easy to confirm the position of the locking projection 35 relative to the locking hole 31 prior to bending the second fold-to-bend portion 27. Therefore, the configuration of the instant invention not only provides a new device, but it also provides a new and useful purpose, namely, permitting a user to confirm the position of the locking projection 35 relative to the locking hole 31 during assembly to ensure a durable connection.

Thus, it would not have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the hole in the second fold-to-bend portion, and the locking projection on the flange portion. For example, there is absolutely nothing in Spencer, nor in any of the other cited prior art, demonstrating that one of skill in the art would modify the described crimping connection.

Office personnel should consider all rebuttal evidence that is timely presented by the applicants when reevaluating any obviousness determination. Rebuttal evidence may include evidence of "secondary considerations," such as "commercial success, long felt but unsolved needs, [and] failure of others" (Graham v. John Deere Co., 383 U.S. at 17, 148 USPQ at 467). See also MPEP 2141.

For example, the instant application provides a solution to this long felt but unsatisfied need. Indeed, it was the instant applicants who first recognized the advantage of making the modification, some 20 years after Spencer and Enami. Moreover, as noted above, Enami clearly describes that a locking projection and hole cannot provide a sufficient electrical conduction area. See Col. 14, lines 15-30 of Enami. Spencer is completely silent on this point. This evidences a failure of others, notably, a failure of the closest prior art of record. Thus, a review of these "secondary considerations" clearly shows that the instant application would not have been obvious

to one of ordinary skill in the art at the time the invention was made.

Therefore, Spencer's structures are different from the claimed structure. Moreover, Spencer does not clearly disclose or render foreseeable all of the limitations of amended claims 10 or 11, as is required by law to support a rejection under U.S.C. 103(a). Notably, Spencer does not disclose, teach, or suggest "wherein the locking projection is formed on the surface on which the insulating films are not formed." Accordingly, it is respectfully submitted that each of amended claims 10 and 11 are now in condition for allowance. Withdrawal of the rejections is respectfully requested.

In light of the foregoing, it is respectfully submitted that the present application is in a condition for allowance and notice to that effect is hereby requested. If it is determined that the application is not in a condition for allowance, the Examiner is invited to initiate a telephone interview with the undersigned attorney to expedite prosecution of the present application.

If there are any additional fees resulting from this communication, please charge same to our Deposit Account No. 16-0820, our Order No. NGB-36548.

Respectfully submitted,

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